

pressure partially or completely takes place before an end temperature for the densification is reached, and before commencing substantial decomposition of apatite phase.

2. (amended) The method of claim 1, characterized in that said groups with a tendency for decomposition are hydroxyl, carbonate, phosphate, halogen or a combination thereof.

B1 3. (amended) The method according to any of claim 1-2, characterized in that one phase in the material comprises a construction ceramic in a concentration of 10-95 vol-%.


4. (amended) The method according to any of claims 1-2, characterized in that one phase in the material comprises a construction metal in a concentration of 10-95 vol-%.

5. (twice amended) The method of claim 1, characterized in that said composite material comprises hydroxyapatite and/or other apatite in a concentration of 5-80 vol%.

B2 6. (twice amended) The method of claim 1, characterized in that said closing of the system and applying of pressure takes place at temperatures

below 900°C for ceramic based composites and for metal based composites below 500°C.

7. (twice amended) The method of claim 1, characterized in that said densification of the material is driven to an end temperature above 900°C for ceramic based composites, or 500-800°C for metal based composites, and to an end pressure above 100 MPa.

 8. (twice amended) The method of claim 1, characterized in that said applying of pressure is performed as a partial applying of pressure, before an end temperature for the densification is reached, and before commencing decomposition of apatite phase, whereby a part of pressure of 0.2-10 MPa is applied.

9. (twice amended) The method of claim 1, characterized in that said densification of the material is performed stepwise, whereby a first part pressure is applied and is maintained up to a first temperature, whereafter a second part pressure is applied and is maintained up to a second temperature, whereafter a possible further is applied, or an end pressure and an end temperature is applied.

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10. (twice amended) The method of claim 1, characterized in that one or more helping agents are added to a barrier layer at densification by hot isostatic pressing or to a powder bed at densification by over pressure sintering, in order to further suppress unwanted reactions.

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11. (amended) The method of claim 10, characterized in that said helping agent is a fine-grained metal powder and/or a hydrate.

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12. (twice amended) A bioactive composite material, comprising apatite, for dental or orthopaedic use, which comprises groups with a tendency for decomposition, characterized in that it has been produced by the method of claim 1.

Add new claims 13-22.

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13. The method of claim 3, wherein the construction ceramic is an oxide in a concentration of 40-95 vol-%.

14. The method of claim 13, wherein the construction ceramic is aluminium oxide, zirconium oxide, or titanium oxide in a concentration of 55-85 vol-%.

15. The method of claim 4, wherein the construction metal is Fe or Co-Cr based or Ti, Ta, or Zr based, in a concentration of 40-95 vol-%.

16. The method of claim 15, wherein the Fe or Co-Cr based or Ti, Ta, or Zr based construction metal has a concentration of 55-85 vol-%.

17. The method of claim 5, wherein the composite material has a concentration of 25-45 vol%.

18. The method of claim 6, wherein the composite is a ceramic-based composite and closing of the system and applying of pressure takes place at temperatures below 700°.

19. The method of claim 6, wherein the composite is a metal-based composite and closing of the system and applying of pressure takes place at temperatures below 500°C.

20. The method of claim 7, wherein the composite is a ceramic-based composite and densification of the material is driven to an end temperature above 1100°C and to an end pressure that is above 100 MPa and up to 200 MPa.

BS 21. The method of claim 7, wherein the composite is a metal-based composite and densification of the material is driven to an end temperature of 600-800°C and to an end pressure that is above 100 MPa and up to 200 MPa.

22. The method of claim 9, wherein the first part pressure applied is a pressure of about 0.2-5 MPa and the second part pressure applied is a pressure of about 1-10 MPa.
